

REMARKS

Claims 1-18 and 22-31 are pending in the application. Claims 1-6, 15-17, and 22-25 were rejected, and claims 7-14, 18, and 26-31 were objected to. Claims 19-21 have been canceled. Claims 1, 13-18, 22, 30, and 31 have been amended herein. Accordingly, claims 1-18 and 22-31 remain active in the application. In view of the claim amendments and the following remarks, reconsideration of the application is respectfully requested.

Claims 19-21 were withdrawn from consideration by the Examiner in response to the election made by the Applicant. Applicant has now canceled claims 19-21.

The drawings were objected to as certain reference characters shown in Figures 3 and 8 were not referred to in the specification. The specification has been amended to include reference to the omitted numbers. No new matter has been added by this amendment. It is noted that reference number 90 was already referred to in the specification at page 9, line 1, and so no additional reference has been added for control bus 90.

Claims 1, 13-14, 30-31, and 15-18 were objected to due to informalities, and correction was required. Appropriate corrections have been made to each of these claims, as well as to claim 22, which contains similar language as that objected to in claim 1.

Claims 15-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over Duffield in view of Braff. Applicant respectfully traverses this rejection, and submits that the combination of Duffield and Braff fails to present a *prima facie* case of obviousness for the rejected claims.

Applicant respectfully submits that the rejection fails to demonstrate the existence of each claimed element in the prior art. As a first matter, the “epoch queues” and usage disclosed by Braff do not match the claimed use of epochs and queues found in claim 15. Braff’s disclosed system is a “time slot” or “cell” system (see time slots TS1, TS2, TS3 in Braff Figure 3) with switching performed on a per-cell basis. Braff, col. 4, ll. 7-2; col. 7, ll. 9-26. As noted by the Examiner, each of Braff’s “epoch” queues is “selectively served exhaustively”—in other words, there is no fixed “epoch” for serving a queue. Once data has been added to a queue, that queue will be completely emptied before the next queue is addressed. Referring to Braff’s exemplary Figures 9-20, five cells from queue 507 are served

to empty that queue (Figs. 9-10), four cells from queue 508 are then served (Figs. 11-12) to empty queue 508, two cells from queue 509 are then served (Figs. 13-14) to empty queue 509, one cell is served from queue 507 (Figs. 16-17) to empty queue 507 again, etc., without any reference whatsoever to an interleaving table.

Braff's operation simply does not match with the elements of claim 15. Claim 15 requires a programmable interleaving table with entries identifying a queue with an epoch value. Braff does not identify queues with epochs at all—each queue is sequentially emptied, no matter how long or short that emptying takes. Braff's table for sorting arriving packets to queues therefore fails to teach or suggest the claimed programmable interleaving table for scheduling queues for content departure during particular epochs.

Since Braff has no programmable interleaving table as claimed, Braff also has no pointer register to that table, as claimed.

Finally, Braff fails to teach or suggest the claimed queue sequencer. As mentioned above, Braff's queue sequencer merely empties each queue, no matter how long it takes, in fixed round-robin fashion. In contrast, the claimed sequencer supplies, for each epoch, a queue based on the current entry in the programmable interleaving table, charges the current entry for use of the epoch, and steps to a next table entry.

The Duffield reference operates in traditional WFQ fashion, but provides a "bypass" path for allocating excess bandwidth using a different proportioning scheme. The rejection fails to show how this scheme teaches or suggests Applicant's claimed epoch-based elements.

Accordingly, neither Braff, Duffield, nor the combination of Braff and Duffield teach or suggest all elements of claim 15. The rejection also is silent as to the additional elements found in claims 16 and 17—elements which do not appear to be taught or suggested by the combination of Braff and Duffield. Applicant respectfully requests that this rejection be withdrawn.

Claims 1-6 and 22-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Duffield in view of Braff, as "method claims corresponding to the apparatus claims 15-17 above" and corresponding computer program product claims. Applicant respectfully traverses this rejection, and submits that the combination of Duffield and Braff fails to present a *prima facie* case of obviousness for these rejected claims.

Claims 1 and 22 are patentable for the same reasons identified in the section above—Duffield and Braff fail to teach or suggest the claimed method steps for epoch-based queue scheduling. The rejection fails to identify any teaching of Duffield or Braff meeting the

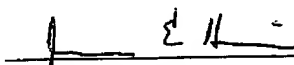
additional limitations of claims 2-6 and 23-25. For instance, neither reference discloses the claim 2 limitation of the programmable interleaving table containing more entries than queues, with each entry explicitly identifying the queue associated with that entry. Applicant respectfully requests that this rejection be withdrawn.

Claims 7-14, 18, and 26-31 were identified as containing allowable subject matter. In view of the arguments presented above in favor of the patentability of the independent claims from which these claims depend, Applicant has elected not to rewrite these claims at the present time.

For the foregoing reasons, reconsideration and allowance of claims 1-18 and 22-31 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.


James E. Harris
Reg. No. 40,013

MARGER JOHNSON & McCOLLOM, P.C.
1030 SW Morrison Street
Portland, OR 97205
503-222-3613
Customer No. 20575

I hereby certify that this correspondence
is being transmitted to the U.S. Patent and
Trademark Office via facsimile number
1-703-872-9306, on September 1, 2004.


Lauren Ballard-Gemmel